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ADAPTING SCIENCE TO THE NEEDS OF AN INNOVATIVE AGRICULTURAL ECOSYSTEM

ABSTRACT

The principles of the development of agricultural science on the platform of public-private partnership are substantiated by modernizing the scientific structure to increase the efficiency and market-adapted state system of agricultural science and creating an innovative entrepreneurial infrastructure to increase the competitiveness and investment attractiveness of projects for the transfer of scientific innovations on a business basis.

The combination of modern methods of innovative economics and the experience of implementing breakthrough innovations with the involvement of venture capital investments made it possible to substantiate the conceptual principles of the development of agricultural science on the platform of public-private partnership, which allows, within the framework of existing legislation and promising regulatory and legal solutions, to combine the intellectual and experimental potential of science with the resources and flexible market infrastructure of high-tech business.

Practical value - the implementation of a set of measures for the development of agricultural science on the platform of public-private partnership will ensure: optimization of the system of agricultural science, restoration of the intellectual and production base lost during the hostilities; concentration of the scientific potential of the NAAS on the implementation of priority tasks of the agricultural sector development strategy, meeting production needs, protecting the domestic market from poor-quality technological and organizational expansions; integration of agricultural science into the business environment, strengthening competitiveness by creating an entrepreneurial innovation infrastructure on the scientific base of the NAAS; increase in revenues to the special fund due to long-term market orders for scientific and technical products in demand by production, participation in joint innovation and investment projects with business. The Institute of Innovative Bioeconomy, together with the institutions of the NAAS, has gained experience in creating and disseminating scientific innovations on a business basis on the platform of public-private partnership.

Keywords: agricultural science, innovation, business, public-private partnership, innovation ecosystem, modernization, NAAS

JEL Classification: O13, O32, Q16

INTRODUCTION

The agricultural sector is critically important for the economy of Ukraine, ensuring food security and a significant share of exports. Despite its high adaptation to war conditions, the industry continues to face internal and external challenges related to both security and economic and technological factors, the key ones of which are:

- deepening of the problem of labor shortage in agricultural production;
- loss of part of the land resources and deterioration of their qualitative condition;
- destruction of production potential, covering the spheres of production, processing, and logistics;
- increase in costs, increase in the cost of imported resources.

In view of this, the main tasks of the state agrarian policy should be to ensure the sustainability of agricultural producers, improve their financial condition, create the ability to function in conditions of climate change, and adapt to the common agricultural policy of the EU.

These goals can be achieved through high-tech development of the agri-food sector, which requires scientific and innovative support.

Agricultural science, despite limited resources, the loss of a significant part of the research and experimental base, and personnel, has scientific and innovative potential: highly productive varieties, breeds, and technologies that can become the basis for the revival of stable agricultural production in the industry and regions.

The following issues are important:

1. Preservation of the domestic scientific base for research and development of agriculture, rural areas, and food.
2. Increasing the efficiency of scientific developments, transitioning from the predominant production of new knowledge to the creation of innovations necessary for production.
3. Integration of agricultural science and business on the platform of public-private partnership, creation of a market-oriented infrastructure for the implementation of joint innovation and investment projects.

The National Academy of Agrarian Sciences (NAAS) conducts a complex of studies of the scientific foundations, problems, and prospects for building effective economic systems in the knowledge-intensive agricultural sector.

Despite insufficient funding, the loss of part of the research and production base as a result of military operations, agricultural science continues to fulfill priority tasks for the development of agriculture and rural areas, the introduction of environmentally friendly land use, and ensuring food, biological, breeding, and energy security of the state in close cooperation with agricultural producers and territorial communities. Maintaining scientific potential is impossible without targeted state support for research; this is the first direction of development.

Another direction is to strengthen integration processes with the participation of applied science and business. To establish a leading role in the industry, the Academy must master a public-private model of functioning and development, which provides scientific and innovative support for the effective functioning of the agri-food sector of Ukraine, supplying agricultural producers and food industry enterprises not only with new knowledge, but also with high-tech products from domestic developers and manufacturers.

The implementation of these areas requires the introduction of a public-private partnership platform in the NAAS system, according to which the function of the transfer infrastructure for ordering and promoting scientific innovations to the market in the format of business projects is performed by innovative enterprises created at scientific institutions or involved - providers (parks, centers), business incubators, venture companies, contractual associations - innovative production clusters.

LITERATURE REVIEW

The development of science and education as a key area for ensuring scientific and technological progress in the economy of Ukraine is considered in the Conceptual Provisions and Proposals of the National Academy of Sciences of Ukraine (2025), in particular on issues of increasing the efficiency of promising areas of scientific research, improving the interaction of science and government, science and society, studying foreign experience in organizing scientific activity.

Some scientific research is aimed at solving the problems of developing scientific and innovative activity, Shpykulyak O.G. (2016), cooperation with higher educational institutions, and business O. Vytvytska (2021).

In the field of agricultural science and education, based on state decisions, a concept of reforming and developing agricultural education and science has been defined, on the basis of which a set of measures has been implemented over the past 10 years to develop agricultural education - V. Shebanin (2021), O. Vytvytska (2021,2024), academic agricultural science - Y. Hadzalo (2021), S. Volodin (2021, 2024), P. Sabluk (2020), Shpykulyak O.G. (2016, 2024).

The methodology for studying ways to build mutually beneficial cooperation between science and business requires knowledge about the functioning of knowledge-intensive market entities, the construction of innovation ecosystems in the education sector, the definition of scientific and methodological approaches to the creation and functioning of innovation ecosystems to ensure the integration of education, science and production in the knowledge economy using the example of the agricultural sector Y. Hadzalo (2021), S. Volodin (2021), P. Sabluk (2020).

Over the past five years, a consensus has emerged in the scientific literature that partnerships between agricultural science and business are a key element of innovative agricultural systems. Research within the Agricultural Innovation Systems (AIS) and Agricultural Knowledge and Innovation Systems (AKIS) frameworks highlights those innovations no longer occur within a linear “science-production-market” model. Instead, they are shaped through complex interactions between universities, research institutes, agribusiness, farmers, the state, and financial institutions. Hall, Dijkman, and Sulaiman (2020) show that the absence of business in the early stages of research programs leads to low commercialization of results.

The role of “innovation brokers” (hubs, clusters, transfer agencies) that connect science and business and reduce the transaction costs of cooperation Klerkx, L., Begemann (2021), partnerships should be focused not only on productivity, but also on the environmental and social transformation of the agricultural sector Pigford et al. (2022), the success of partnerships depends on the joint creation of knowledge (co-creation), and not on the linear transfer “science → farmer” Fieldsend et al. (2021-2023), Digital Innovation Hubs are identified as a key EU tool for bringing together science, startups and agricultural producers Bacco et al. (2023). Rockenbach, T., Sakdapolrak, P., & Sterly, H. (2019).

The specificity of domestic legislation and economic conditions encourages researchers to search for effective models of institutional support for public-private partnership in the field of innovative development Ya. Hadzalo, P. Luzan (2021).

Despite a significant number of studies on various aspects of building scientific and innovation systems, the organizational, legal, and economic issues of building effective systems for the innovative development of agricultural science based on public-private partnership in the context of the war crisis and post-war recovery remain unresolved, which requires additional research.

AIMS AND OBJECTIVES

The goal is to increase the efficiency of agricultural science by adapting the scientific structure to modern market conditions and creating an innovative infrastructure for the transfer of scientific developments on a business basis.

Practical value – the implementation of a set of measures for the development of agricultural science on the platform of public-private partnership will ensure:

- optimization of the system of agricultural science, restoration of the intellectual and production base lost during the hostilities;
- concentration of the scientific potential of the NAAS on the implementation of priority tasks of the agricultural sector development strategy, meeting production needs, protecting the domestic market from poor-quality technological and organizational expansions;
- integration of agricultural science into the business environment, strengthening competitiveness by creating an entrepreneurial innovation infrastructure on the scientific basis of the NAAS;
- increasing revenues to the special fund through long-term market orders for scientific and technical products in demand by production, participation in joint innovation and investment projects with businesses.

METHODS

The research methodology is based on the works of the classics of theories of industry markets, innovative economics, and entrepreneurship in the knowledge-intensive sector. The basic theories of innovative development have been continued in the concepts of innovative provision of new creations and innovations on an entrepreneurial basis, as well as innovative bioeconomy, which combines biology, economics, and ecology into a sustainable ecosystem for the creation of renewable bioresources and innovative biotechnologies based on scientific knowledge and their rational use in various sectors of the national economy.

RESULTS

In the conditions of war and post-war crisis, the deterioration of the economy, the issues of developing Ukraine, restoring the agricultural sector, ensuring the state's food security, and increasing its export potential are among the top priorities.

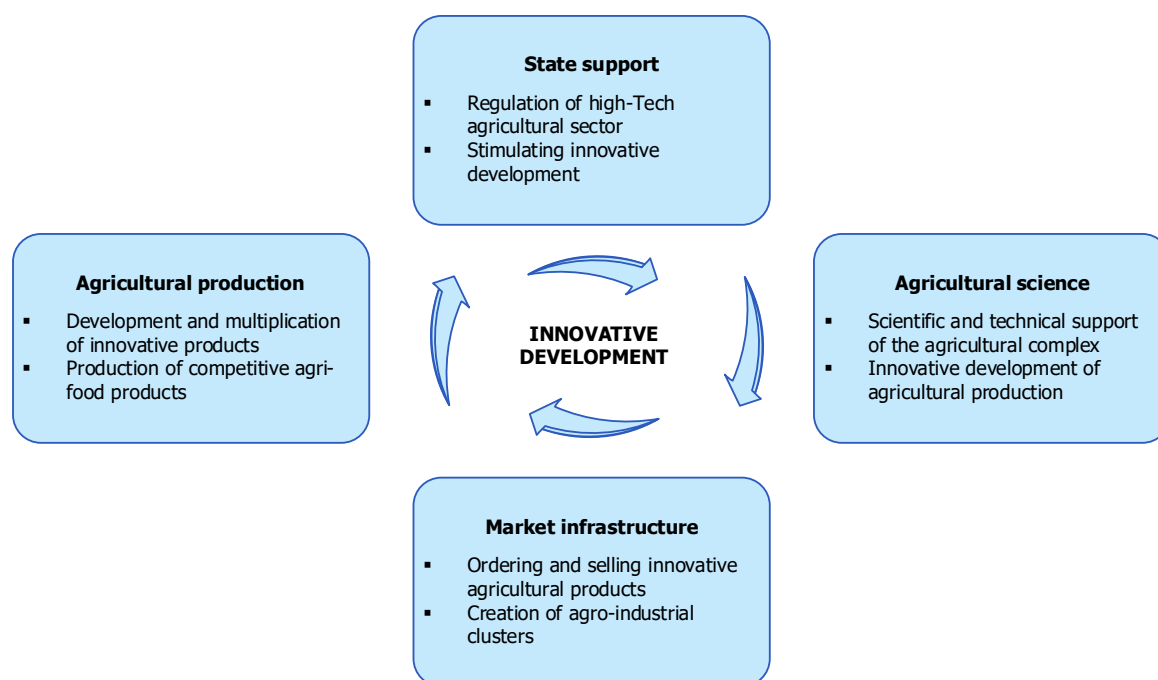
Agricultural science, despite limited resources, the loss of a significant part of the research and experimental base and personnel, retains scientific and innovative potential, has highly productive varieties, breeds, and technologies that can become the basis for the revival of stable agricultural production in the industry and regions.

The National Academy of Agrarian Sciences conducts a complex of research on the scientific foundations, problems, and prospects for building effective economic systems in the agricultural sector, modern theories and practices of innovative development based on and with the participation of agricultural science. Scientists of the academy carry out fundamental research and applied developments in various aspects of the innovative bioeconomy, industry segments of crop production, animal husbandry, processing, regional development of agricultural production and rural areas, and the creation of circular agricultural technologies and ecosystems.

It is urgent to solve the problem of substantiation and practical implementation of a market-adapted system for promoting scientific and innovative achievements of NAAS institutions on the basis of cluster-based public-private partnership with a wide range of agricultural producers, processing and commercial companies, customers and investors in the production of high-tech products. Supporting high scientific potential in conditions of insufficient state funding encourages scientific institutions to search for partners capable of applying entrepreneurial mechanisms for the effective implementation of scientific developments demanded by the market through an innovative and investment infrastructure integrated with business, ordering, and dissemination of scientific innovations, growing, processing, and selling innovative products.

The Institute of Innovative Bioeconomy, commissioned by the NAAS, has developed models of innovative development of agri-food ecosystems and agricultural science on the platform of public-private partnership.

The model of innovative development of the agricultural sector (Figure 1) is based on the state innovation policy, the innovative potential of science, the innovative infrastructure of the market, and innovatively active agricultural production. The effectiveness of the innovative model of the agricultural ecosystem is determined, first of all, by the ability of agricultural science to create developments necessary for production and implement them through the transfer and technological infrastructure of the agricultural market.



(Figure 1. Model of an innovative agroecosystem.

It is planned to strengthen state support for measures to develop innovative infrastructure and implement projects under public-private partnership.

The main goals and ways to create favorable conditions for the development of a competitive, sustainable, and diversified agricultural sector that ensures food and biosecurity, supports biodiversity, and ecological and social development of rural areas are also strategically defined in the Strategy for the Development of Agriculture and Rural Areas in Ukraine for the Period Until 2030. Resolution of the Cabinet of Ministers of Ukraine dated 15.11.2024 No. 1163-p.

Priority tasks for agricultural science (Figure 2) are the development of the agricultural sector and rural areas, ensuring the food and ecological security of the state.

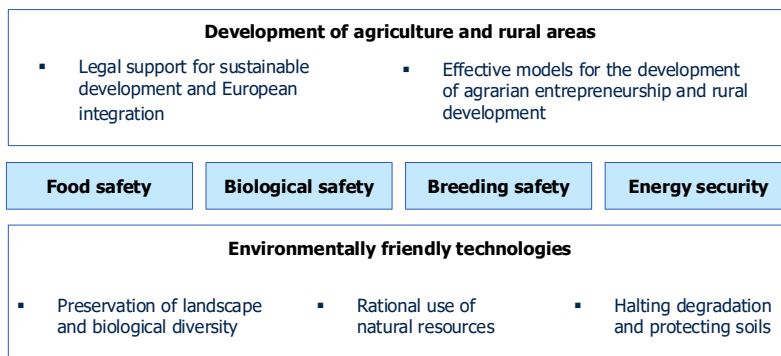


Figure 2. Tasks of agricultural science.

To fulfill state strategic tasks, agricultural science must use and increase the scientific and production potential of the NAAS, which suffers from internal and external factors. Scientific and production base: 6 scientific departments, 82 scientific institutions, 5.4 thousand employees, including 2.8 thousand scientists, 200 research laboratories, banks of genetic resources and microorganisms; 91 research farms, 276.7 thousand hectares of land, 4.2 thousand employees, 67% of the seed market, up to 50% of the market for breeding resources, 150 demonstration sites. Problems of academic science: limited funding – does not exceed 50% of the need, the material base is not updated, low remuneration of scientists, difficulties in maintaining scientific potential, low efficiency of introducing science-intensive products into production, no own network of consulting and commercialization of innovations (science-production), the existing experimental and production base can provide self-financing of science at the level of UAH 3 per UAH 1 of budget funds, a market-oriented system of production and distribution of market-required developments and resources in cooperation with business is necessary.

As a result of unfavorable economic and political conditions, insufficient attention from the state, the number of scientific institutions decreased from 98 to 82, scientific staff from 7.1 thousand to 2.8 thousand (2.5 times), and state-owned enterprises from 223 to 91. The total area of land use under the management of the NAAS decreased from 707 thousand hectares to 276.7 thousand hectares. The reduction of the scientific and production base of the NAAS is not over. And this is not only as a result of occupation and military operations. A feature of agricultural science is that it requires significant land and property resources to ensure high-quality research in various soil and climatic zones of Ukraine. Therefore, the landlessness of scientific institutions of the NAAS is a step towards the destruction of sectoral and regional scientific centers designed to provide agricultural production with high-quality breeding material, its improvement, technological resources, technical and agrochemical means of conducting modern agriculture.

Despite limited funding (50% of the need), the loss of part of the research and production base as a result of military operations, agricultural science continues to fulfill priority tasks in the development of agriculture and rural areas, the introduction of environmentally friendly land use, ensuring food, biological, breeding, and energy security of the state in close cooperation with agricultural producers and territorial communities. Maintaining scientific potential is impossible without targeted state support for research, which is a priority area. Today, 90% of state funding goes to low salaries for scientists. Despite the importance of fundamental research, scientometric quartiles (Figure 3) and other certification criteria, agricultural science is valuable for its applied results - new plant varieties, animal breeds, agricultural technologies, biological products, etc.

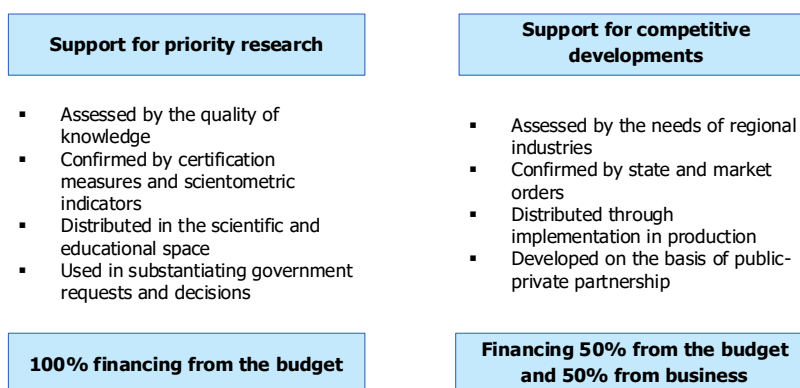


Figure 3. Science funding.

It is necessary to clearly realize that the destruction of domestic selection, seed production, and pedigree livestock breeding today is not the sown millions of hectares of arable land tomorrow, due to the elementary lack of seed material, destroyed livestock, which already requires serious support, which is not only a threat to the food security of the state, but, without exaggeration, a high probability of further uncontrolled negative social processes, the main cause of which may be a shortage of food products. Therefore, applied aspects of science, especially agricultural science, which create resources and technologies for life, should be dominant in the state's scientific and innovative policy for the development of the agro-food sector.

Therefore, along with strengthening state support, an important direction is the activation of integration processes of applied science and business, the development of the NAAS public-private model of functioning and development.

It is necessary to identify fundamental scientific centers that are of strategic importance in the agri-food sector and should receive 100% state funding for the coordination and conduct of scientific and expert activities in the relevant segments, in particular on the basis of institutes of soil science and agrochemistry, water problems and land reclamation, veterinary medicine, agrarian economics, food resources, etc.

Institutions of a sectoral nature, in particular breeding in plant and animal husbandry, agriculture, microbiology and others should receive at least 50% of funding from the state, but 50% from business partners, which will ensure the strengthening of the experimental and production base and marketing capacity of institutions in terms of creating and selling competitive breeding and technological products, providing advisory services necessary for agricultural production.

Highly specialized and regionally significant institutions may receive a state order of 20% or more, focus on implementing regional development programs for territorial communities, and business orders from private partners in the amount of 80%.

Taking into account the experience of Eastern European countries that have successfully transformed science according to market models in 1990-2010, it is necessary to regulate at the legislative level the corporatization, privatization, and innovation and investment development of industry and regional institutions with the participation of science and private capital, while preserving the scientific profile and specialized production and technological base.

On the methodological basis of innovative providing and innovative bioeconomy, comprehensive studies of the innovative potential of scientific developments were conducted on the basis of the Institutes of Bioenergy Crops and Sugar Beet, Horticulture, Potato Growing, Agriculture, Beekeeping, and other institutions of the NAAS, during which the problems and prospects for the development of scientific institutions in partnership with high-tech agribusiness were studied. Thus, on the basis of the Institute of Potato Growing, during 2021-2025, the Startup of the National Project "Ukrainian Potato" for the production and sale of seed potatoes on a cluster basis was carried out. Investments amounted to UAH 11 million, and innovative products worth UAH 6.2 million were sold. On the basis of the Institute of Bioenergy Crops and Sugar Beet, a fast plant technology for the transfer of scientific bioinnovations for the production of niche crops, in particular, stevia, ginger, buckwheat, cultivation and processing of bioenergy crops, production of organic products using biofertilizers, and microwave seed treatment technologies was developed and tested.

On the basis of the Institute of Horticulture, startups were tested for the cultivation of fruit and berry crops, the creation of a cluster for the improvement and distribution of virus-free planting material, the cultivation of essential oil crops, the processing and sale of health drinks, and freeze-dried products.

Based on the results of innovative practices, issues that prevent state institutions from being competitive in the market were identified, as well as promising models and mechanisms for joint activities for the implementation of scientific innovations on a business basis.

Thus, the development of agricultural science on the platform of public-private partnership is carried out in two strategic directions:

1. Increasing efficiency and market adaptability by:

- Optimization of the state structure, which provides for statutory changes and management decisions of the NAAS:
 - improvement of the organization and management system;
 - strengthening the role of the main scientific centers in coordinating fundamental research;
 - increasing the effectiveness of the implementation of applied developments of institutions of the sectoral and regional levels, their experimental base;

- transition to a program-targeted method of determining the topic, financing, and assessing the effectiveness of scientific research and development.

2. Transferring some institutions to a non-state form of ownership, which provides for legislative decisions:

- corporatization of applied institutions and enterprises, creation of profitable research and technology centers on their basis;
- expansion of the statutory powers of the NAAS in connection with joining state and non-state structures.

The current organizational structure of the NAAS (Figure 4) has a lot of shortcomings.

Building a scientific network according to the sectoral principle (departments of agriculture, plant production, animal husbandry, veterinary medicine, economics, food, and regional centers) does not contribute to the concentration and obtaining significant results of fundamental research, or the compliance of programs with the directions of the international research space.

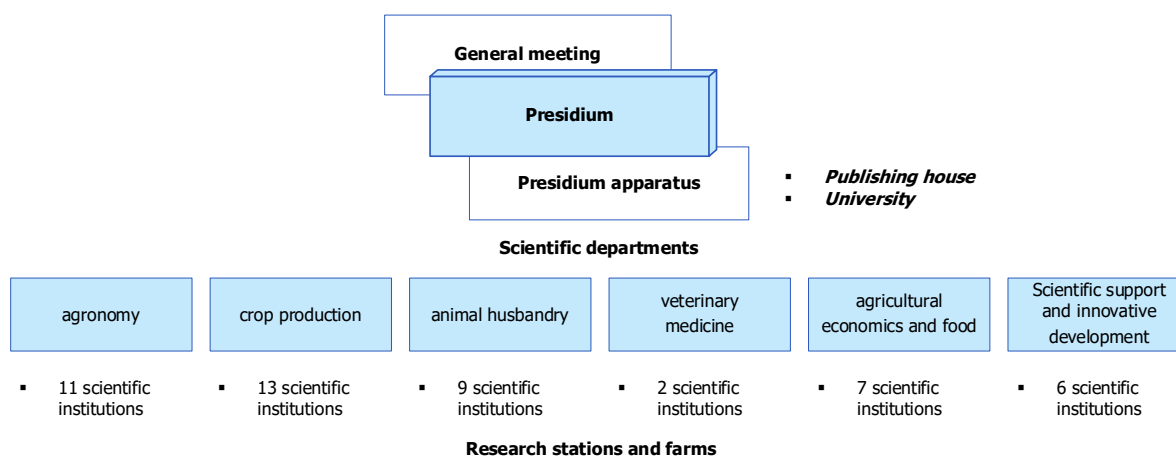


Figure 4. The current NAAS system.

The decentralized management system of scientific institutions, including part of research stations and research farms, limits the possibilities of carrying out a complex of research, development, and implementation, which reduces the efficiency of transferring scientific innovations to agricultural production.

The status of budgetary institutions and state enterprises that are part of the NAAS administration does not allow attracting investments in the development of the material and technical base, and forming flexible relations with partners in production and commercial agribusiness.

The status of budgetary institutions and state enterprises that are part of the NAAS administration does not allow attracting investments in the development of the material and technical base, forming flexible relations with partners of production and commercial agribusiness. To solve these problems, it is necessary to adapt the NAAS system (Figure 5) to modern requirements for the formation of scientific knowledge, the development and implementation of scientific and innovative products in the fields of agriculture, rural areas, and food.

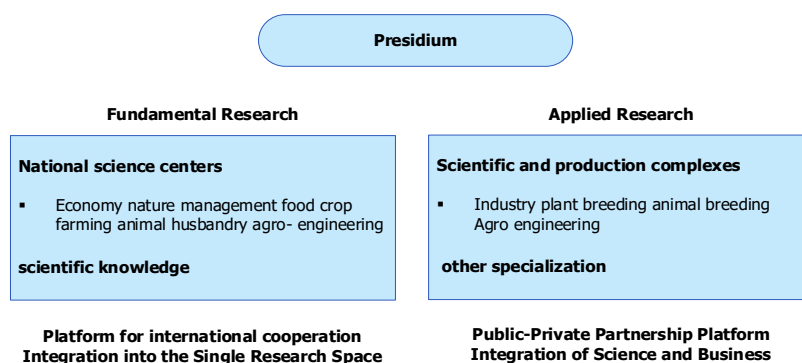


Figure 5. Adaptation of the NAAS system.

In our opinion, the academy needs to identify and concentrate fundamental research in national scientific centers, which can be no more than 8 (economics, food, agriculture, plant breeding, animal husbandry, veterinary medicine, agricultural engineering), which, together with co-implementing institutions, are capable of producing scientific knowledge at a high scientific level, justifying the legislative framework and expert conclusions on the development of the agro-food sector. National centers have sufficient research and technological, experimental, and production base to meet the needs of the relevant sector of the agro-food complex in high-quality scientific and innovative products. Financing of state orders from budget funds and market orders from businesses should be 50% to 50% of the necessary need, which stimulates institutions to increase the volume of supplies and services of scientific and innovative products demanded by production and the market.

Applied institutions are more sensitive to the creation and functioning of innovative infrastructure based on agricultural science on the basis of public-private partnership. In the future, based on relevant legislative decisions, applied institutions can be transformed into entities of a non-state form of ownership, which will increase their innovative capacity and investment attractiveness.

Increasing competitiveness through the development of integrated models of cooperation between science and business, in particular:

1. Establishment of a public-private partnership platform, which provides for:
 - definition of the principles of the platform, forms and mechanisms of public-private partnership, creation of a center of competences for regulating relations between scientific and business partners;
 - promotion of the formation of innovation infrastructure on the basis of and with the participation of scientific institutions of the National Academy of Sciences of Ukraine, in particular innovation parks and centers, business incubators, reproduction enterprises, venture investors, etc.
2. Introduction to the platform of a corporate management system of joint:
 - startups for the development of the technological base of scientific institutions;
 - clusters for the implementation of innovation and investment business projects in the agri-food sector.

The organizational platform (Figure 6) is a compilation of rules and tools for their application regarding the joint activities of science and business on the basis of a public-private partnership. By partnership, we mean long-term relationships between state organizations, institutions, and enterprises with private enterprises and their associations for the purpose of joint implementation of innovation and investment projects (startups) in various fields of activity.

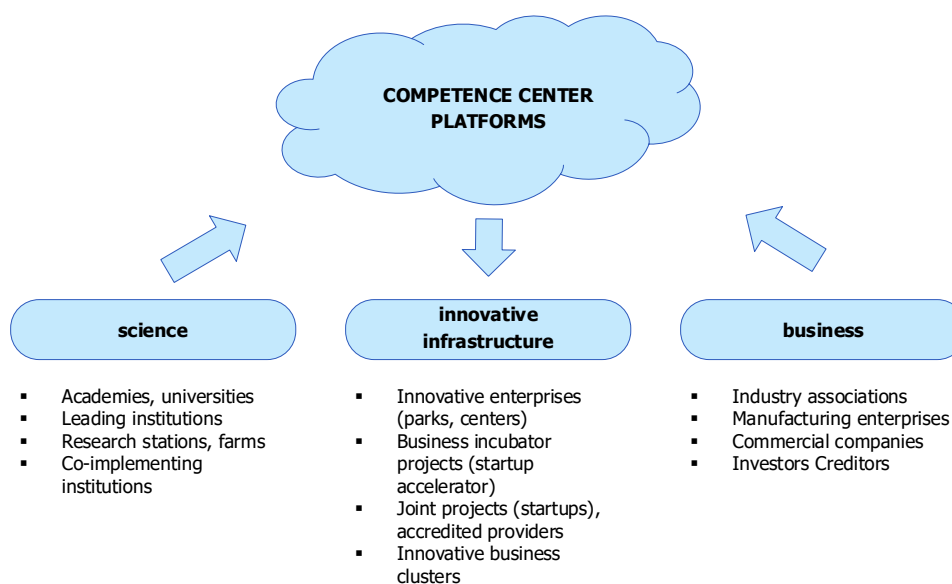
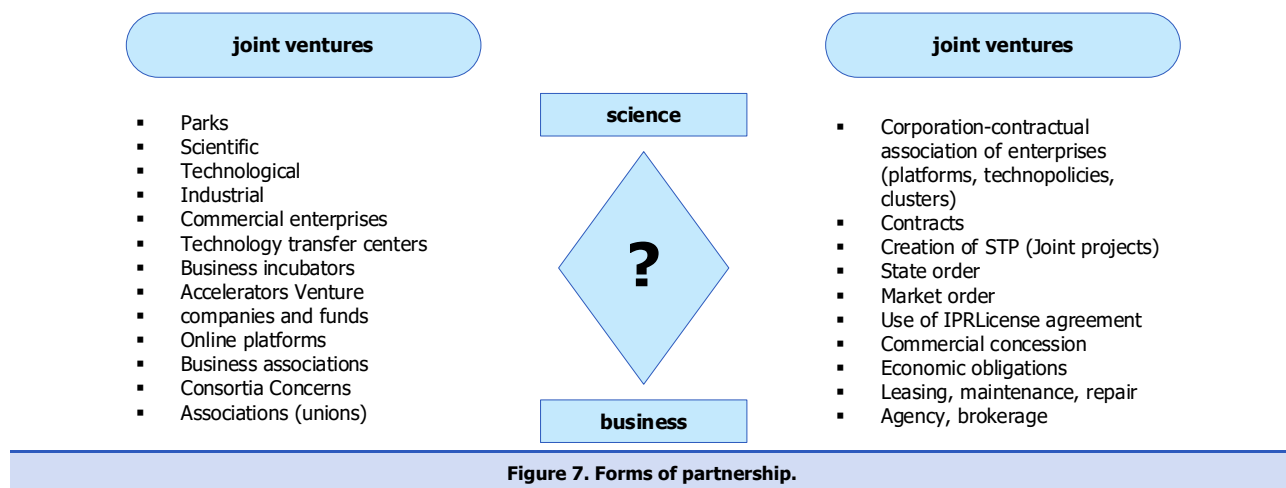


Figure 6. Partnership platform.

Project requests can be initiated by scientific institutions or business partners. The platform competence center invites interested scientific and experimental, consulting, production, and commercial enterprises to cooperate to determine the

relevance and interest of project participants, according to whose requirements the project request is sent for design and implementation to the relevant accredited unit of innovation infrastructure.

Innovation infrastructure may include entities created or involved by science and business in the form of joint ventures (statutory relations) in accordance with the Economic Code of Ukraine (Figure 7).



Participation in the creation of joint ventures (partnerships) for state institutions is limited to contributions of intellectual property objects and the provision of premises and equipment owned by the institutions for rent to business partners on preferential terms. In this way, it is difficult for a state institution to make a significant contribution to the statutory fund of the joint venture. We believe that these circumstances are a serious shortcoming of Ukrainian legislation and the absence of a state protectionist policy for the development of innovation infrastructure. Almost all science and technology parks, innovation transfer centers created at state institutions and educational institutions, are not capitalized by business and do not perform the function of a provider of scientific innovations.

DISCUSSION

A comparative analysis of research in the field of agricultural science-business partnerships confirms that science needs to adapt to create sustainable innovation ecosystems with business.

Theoretically, partnership is considered as an element of the innovation system (Balanchuk, Mikharchenkova, 2021), an institution of innovation brokers (Organization of scientific and innovative activities..., 2021), a tool for ecological and social transformation (Volodin, 2016), and a harmonization of goals and trust between scientific knowledge and requirements of practices.

Multi- author approaches indicate that the success of partnerships depends on the joint creation of knowledge, and not on the linear transfer of "science-farmer" (Volodin, 2022; Vytvytska, 2021), which requires consolidation of partnerships through regional platforms or AKIS advisory services (Volodin, 2017).

That is, researchers justify the importance of building joint ecosystems in the partnership of science and business, but do not provide mechanisms for transforming scientific knowledge and developments (innovations) into innovations demanded by the market (production). This problem is very relevant for Ukrainian agricultural science, which is losing ground in the knowledge-intensive market of agricultural technologies.

The advantages of foreign innovations are confirmed by studies of the implementation of innovations in the field of digital and precision agriculture (Volodin, Vytvytska, 2023; Dasgupta, 2021), biotechnology, breeding, and seed production (Vytvytska et al., 2024; Shpykuliak et al., 2024), scaling and technology transfer (Hadzalo, Luzan, 2021; Shebanin, Vyshnevskaya, 2021; Thanammal et al., 2020). In international practice, the transfer of agricultural technologies is provided by ecosystems that operate on the basis of public-private partnerships in the agricultural sector and have legal and financial support from the state and business incentive funds.

In Ukrainian practice, other legislative and economic levers operate, models of innovative cooperation between universities and business (Understanding Agricultural Knowledge and Innovation System, 2025), science and business are substantiated with the support of the government, but the mechanisms by which academic and educational science can provide agribusiness with competitive innovations are not provided.

Based on the research conducted, the authors of the work developed a set of measures to adapt science to the requirements and needs of the innovative agricultural ecosystem, ensuring the transition of science from producing mainly scientific knowledge to supplying innovative products demanded by the competitive market.

CONCLUSIONS

In difficult war conditions, the agricultural sector ensures food and biosecurity of Ukraine, maintains a high export capacity, which requires significant innovations. Agricultural science (academic, educational) has scientific and innovative potential (highly productive varieties, breeds, technologies), but is not sufficiently adapted to adverse economic conditions, the needs of the agri-food business. A market-adapted agro-ecosystem of cooperation between science and business is necessary.

The National Academy of Agrarian Sciences of Ukraine has developed a model of scientific and innovative development of the high-tech agrarian sphere on the basis of and with the participation of academic agrarian science, which provides for:

- modernization of the organizational structure, creation of highly efficient scientific and production complexes;
- transition to a program-targeted method of forming and implementing tasks of scientific research and innovative developments in accordance with industry priorities and the needs of the innovative agri-food agro-ecosystem;
- integration of agricultural science into the business environment through the creation, innovation, and investment development of a joint business infrastructure on the basis of public-private partnership of science and business.

Further research should be directed at the phased implementation of business infrastructure for the needs of the innovative agri-food agro-ecosystem.

ADDITIONAL INFORMATION

AUTHOR CONTRIBUTIONS

All authors have contributed equally.

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CONFLICT OF INTEREST

The Authors declare that there is no conflict of interest.

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АДАПТАЦІЯ НАУКИ ДО ПОТРЕБ ІННОВАЦІЙНОЇ АГРАРНОЇ ЕКОСИСТЕМИ

Обґрунтовано принципи розвитку сільськогосподарської науки на платформі державно-приватного партнерства шляхом модернізації наукової структури для підвищення ефективності адаптованої до ринку державної системи сільськогосподарської науки та створення інноваційної підприємницької інфраструктури для підвищення конкурентоспроможності й інвестиційної привабливості проєктів трансферу наукових інновацій на бізнес-основі.

Поєднання сучасних методів інноваційної економіки та досвіду впровадження проривних інновацій із залученням венчурних інвестицій дозволило обґрунтувати концептуальні принципи розвитку сільськогосподарської науки на платформі державно-приватного партнерства, що дозволяє в рамках чинного законодавства й перспективних нормативно-правових рішень поєднати інтелектуальний та експериментальний потенціал науки з ресурсами й гнучкою ринковою інфраструктурою високотехнологічного бізнесу.

Практична цінність: реалізація комплексу заходів щодо розвитку аграрної науки на платформі державно-приватного партнерства забезпечить оптимізацію системи аграрної науки, відновлення інтелектуальної та виробничої бази, втраченої під час воєнних дій; концентрацію наукового потенціалу НААН на реалізації пріоритетних завдань стратегії розвитку аграрного сектора, задоволенні потреб виробництва, захисті внутрішнього ринку від неякісних технологічних та організаційних розширень; інтеграцію сільськогосподарської науки в бізнес-середовище, посилення конкурентоспроможності шляхом створення підприємницької інноваційної інфраструктури на науковій базі НААН; збільшення надходжень до спеціального фонду за рахунок довгострокових ринкових замовлень на науково-технічну продукцію, що користується попитом виробництва; участь у спільних інноваційних та інвестиційних проєктах із

бізнесом. Інститут інноваційної біоекономіки разом з установами НААН накопичив досвід створення та поширення наукових інновацій на бізнес-основі на платформі державно-приватного партнерства.

Ключові слова: аграрна наука, інновації, бізнес, державно-приватне партнерство, інноваційна екосистема, модернізація, НААН

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